

=====

Sequence Listing was accepted.

If you need help call the Patent Electronic Business Center at (866) 217-9197 (toll free).

Reviewer: Durreshwar Anjum

Timestamp: Thu Sep 27 12:25:44 EDT 2007

=====

Application No: 10798579 Version No: 3.0

Input Set:

Output Set:

Started: 2007-09-18 13:17:45.972
Finished: 2007-09-18 13:17:47.338
Elapsed: 0 hr(s) 0 min(s) 1 sec(s) 366 ms
Total Warnings: 2
Total Errors: 0
No. of SeqIDs Defined: 68
Actual SeqID Count: 68

Error code	Error Description
W 213	Artificial or Unknown found in <213> in SEQ ID (29)
W 213	Artificial or Unknown found in <213> in SEQ ID (30)

SEQUENCE LISTING

<110> SHINOZAKI, KAZUKO
UMEMOTO, NAOYUKI
MAMIYA, KANJI
TOGURI, TOSHIHIRO

<120> PRODUCTION OF PLANTS HAVING IMPROVED ROOTING EFFICIENCY
AND VASE LIFE USING STRESS-RESISTANCE GENE

<130> 081356-0210

<140> 10798579
<141> 2004-03-12

<150> JP 2003-71082
<151> 2003-03-14

<160> 68

<170> PatentIn Ver. 3.3

<210> 1
<211> 933
<212> DNA
<213> Arabidopsis thaliana

<220>
<221> CDS
<222> (119)..(766)

<400> 1
cctgaactag aacagaaga gagagaaaact attatttcag caaaccatac caacaaaaaa 60
gacagagatc ttttagttac cttatccagt ttcttcaaac agagtactct tctgatca 118
atg aac tca ttt tct gct ttt tct gaa atg ttt ggc tcc gat tac gag 166
Met Asn Ser Phe Ser Ala Phe Ser Glu Met Phe Gly Ser Asp Tyr Glu
1 5 10 15
tct tcg gtt tcc tca ggc ggt gat tat att ccg acg ctt gcg agc agc 214
Ser Ser Val Ser Gly Gly Asp Tyr Ile Pro Thr Leu Ala Ser Ser
20 25 30
tgc ccc aag aaa ccg gcg ggt cgt aag aag ttt cgt gag act cgt cac 262
Cys Pro Lys Lys Pro Ala Gly Arg Lys Lys Phe Arg Glu Thr Arg His
35 40 45
cca ata tac aga gga gtt cgt cgg aga aac tcc ggt aag tgg gtt tgt 310
Pro Ile Tyr Arg Gly Val Arg Arg Asn Ser Gly Lys Trp Val Cys
50 55 60
gag gtt aga gaa cca aac aag aaa aca agg att tgg ctc gga aca ttt 358
Glu Val Arg Glu Pro Asn Lys Lys Thr Arg Ile Trp Leu Gly Thr Phe
65 70 75 80

caa acc gag atg gca gct cga gct cac gac gtt gcc gct tta gcc 406
 Gln Thr Ala Glu Met Ala Ala Arg Ala His Asp Val Ala Ala Leu Ala
 85 90 95

 ctt cgt ggc cga tca gcc tgt ctc aat ttc gct gac tcg gct tgg aga 454
 Leu Arg Gly Arg Ser Ala Cys Leu Asn Phe Ala Asp Ser Ala Trp Arg
 100 105 110

 ctc cga atc ccg gaa tca act tgc gct aag gac atc caa aag gcg gcg 502
 Leu Arg Ile Pro Glu Ser Thr Cys Ala Lys Asp Ile Gln Lys Ala Ala
 115 120 125

 gct gaa gct gcg ttg gcg ttt cag gat gag atg tgt gat gcg acg acg 550
 Ala Glu Ala Ala Leu Ala Phe Gln Asp Glu Met Cys Asp Ala Thr Thr
 130 135 140

 gat cat ggc ttc gac atg gag gag acg ttg gtg gag gct att tac acg 598
 Asp His Gly Phe Asp Met Glu Glu Thr Leu Val Glu Ala Ile Tyr Thr
 145 150 155 160

 gcg gaa cag agc gaa aat gcg ttt tat atg cac gat gag gcg atg ttt 646
 Ala Glu Gln Ser Glu Asn Ala Phe Tyr Met His Asp Glu Ala Met Phe
 165 170 175

 gag atg ccg agt ttg ttg gct aat atg gca gaa ggg atg ctt ttg ccg 694
 Glu Met Pro Ser Leu Leu Ala Asn Met Ala Glu Gly Met Leu Leu Pro
 180 185 190

 ctt ccg tcc gta cag tgg aat cat aat cat gaa gtc gac ggc gat gat 742
 Leu Pro Ser Val Gln Trp Asn His Asn His Glu Val Asp Gly Asp Asp
 195 200 205

 gac gac gta tcg tta tgg agt tat taaaactcag attattattt ccatttttag 796
 Asp Asp Val Ser Leu Trp Ser Tyr
 210 215

 tacgatactt tttatttat tattatttt agatcctttt tttagaatgga atcttcatta 856

 tgtttgtaaa actgagaaaac gagtgtaaaat taaattgatt cagtttcagt ataaaaaaaaa 916

 aaaaaaaaaa aaaaaaaa 933

 <210> 2
 <211> 216
 <212> PRT
 <213> Arabidopsis thaliana

 <400> 2
 Met Asn Ser Phe Ser Ala Phe Ser Glu Met Phe Gly Ser Asp Tyr Glu
 1 5 10 15

 Ser Ser Val Ser Ser Gly Gly Asp Tyr Ile Pro Thr Leu Ala Ser Ser
 20 25 30

 Cys Pro Lys Lys Pro Ala Gly Arg Lys Lys Phe Arg Glu Thr Arg His
 35 40 45

Pro Ile Tyr Arg Gly Val Arg Arg Arg Asn Ser Gly Lys Trp Val Cys			
50	55	60	
Glu Val Arg Glu Pro Asn Lys Lys Thr Arg Ile Trp Leu Gly Thr Phe			
65	70	75	80
Gln Thr Ala Glu Met Ala Ala Arg Ala His Asp Val Ala Ala Leu Ala			
85	90	95	
Leu Arg Gly Arg Ser Ala Cys Leu Asn Phe Ala Asp Ser Ala Trp Arg			
100	105	110	
Leu Arg Ile Pro Glu Ser Thr Cys Ala Lys Asp Ile Gln Lys Ala Ala			
115	120	125	
Ala Glu Ala Ala Leu Ala Phe Gln Asp Glu Met Cys Asp Ala Thr Thr			
130	135	140	
Asp His Gly Phe Asp Met Glu Glu Thr Leu Val Glu Ala Ile Tyr Thr			
145	150	155	160
Ala Glu Gln Ser Glu Asn Ala Phe Tyr Met His Asp Glu Ala Met Phe			
165	170	175	
Glu Met Pro Ser Leu Leu Ala Asn Met Ala Glu Gly Met Leu Leu Pro			
180	185	190	
Leu Pro Ser Val Gln Trp Asn His Asn His Glu Val Asp Gly Asp Asp			
195	200	205	
Asp Asp Val Ser Leu Trp Ser Tyr			
210	215		

<210> 3
<211> 1437
<212> DNA
<213> *Arabidopsis thaliana*

<220>
<221> CDS
<222> (167) .. (1171)

```

<400> 3
gctgtctgat aaaaagaaga ggaaaactcg aaaaagctac acacaagaag aagaagaaaa 60

gatacggagca agaagactaa acacgaaagc gatttatcaa ctcgaaggaa gagactttga 120

ttttcaaatt tcgtccccta tagatttgtt tgtttctggg aaggag atg gca gtt      175
                                         Met Ala Val
                                         1

tat gat cag agt gga gat aga aac aga aca caa att gat aca tcg agg 223
Tyr Asp Gln Ser Gly Asp Arg Asn Arg Thr Gln Ile Asp Thr Ser Arg
      5           10           15

```

aaa agg aaa tct aga agt aga ggt gac ggt act act gtg gct gag aga			271
Lys Arg Lys Ser Arg Ser Arg Gly Asp Gly Thr Thr Val Ala Glu Arg			
20	25	30	35
tta aag aga tgg aaa gag tat aac gag acc gta gaa gaa gtt tct acc			319
Leu Lys Arg Trp Lys Glu Tyr Asn Glu Thr Val Glu Glu Val Ser Thr			
40	45	50	
aag aag agg aaa gta cct gcg aaa ggg tcg aag aag ggt tgt atg aaa			367
Lys Lys Arg Lys Val Pro Ala Lys Gly Ser Lys Lys Gly Cys Met Lys			
55	60	65	
ggt aaa gga gga cca gag aat agc cga tgt agt ttc aga gga gtt agg			415
Gly Lys Gly Gly Pro Glu Asn Ser Arg Cys Ser Phe Arg Gly Val Arg			
70	75	80	
caa agg att tgg ggt aaa tgg gtt gct gag atc aga gag cct aat cga			463
Gln Arg Ile Trp Gly Lys Trp Val Ala Glu Ile Arg Glu Pro Asn Arg			
85	90	95	
ggt agc agg ctt tgg ctt ggt act ttc cct act gct caa gaa gct gct			511
Gly Ser Arg Leu Trp Leu Gly Thr Phe Pro Thr Ala Gln Glu Ala Ala			
100	105	110	115
tct gct tat gat gag gct gct aaa gct atg tat ggt cct ttg gct cgt			559
Ser Ala Tyr Asp Glu Ala Ala Lys Ala Met Tyr Gly Pro Leu Ala Arg			
120	125	130	
ctt aat ttc cct cgg tct gat gcg tct gag gtt acg agt acc tca agt			607
Leu Asn Phe Pro Arg Ser Asp Ala Ser Glu Val Thr Ser Thr Ser Ser			
135	140	145	
cag tct gag gtg tgt act gtt gag act cct ggt tgt gtt cat gtg aaa			655
Gln Ser Glu Val Cys Thr Val Glu Thr Pro Gly Cys Val His Val Lys			
150	155	160	
aca gag gat cca gat tgt gaa tct aaa ccc ttc tcc ggt gga gtg gag			703
Thr Glu Asp Pro Asp Cys Glu Ser Lys Pro Phe Ser Gly Gly Val Glu			
165	170	175	
ccg atg tat tgt ctg gag aat ggt gcg gaa gag atg aag aga ggt gtt			751
Pro Met Tyr Cys Leu Glu Asn Gly Ala Glu Glu Met Lys Arg Gly Val			
180	185	190	195
aaa gcg gat aag cat tgg ctg agc gag ttt gaa cat aac tat tgg agt			799
Lys Ala Asp Lys His Trp Leu Ser Glu Phe Glu His Asn Tyr Trp Ser			
200	205	210	
gat att ctg aaa gag aaa gag aaa cag aag gag caa ggg att gta gaa			847
Asp Ile Leu Lys Glu Lys Glu Lys Gln Lys Glu Gln Gly Ile Val Glu			
215	220	225	
acc tgt cag caa caa cag cag gat tcg cta tct gtt gca gac tat ggt			895
Thr Cys Gln Gln Gln Gln Asp Ser Leu Ser Val Ala Asp Tyr Gly			
230	235	240	

tgg ccc aat gat gtg gat cag agt cac ttg gat tct tca gac atg ttt		943	
Trp Pro Asn Asp Val Asp Gln Ser His Leu Asp Ser Ser Asp Met Phe			
245	250	255	
 gat gtc gat gag ctt cta cgt gac cta aat ggc gac gat gtg ttt gca	991		
Asp Val Asp Glu Leu Leu Arg Asp Leu Asn Gly Asp Asp Val Phe Ala			
260	265	270	275
 ggc tta aat cag gac cg ^g tac cc ^g ggg aac agt gtt gcc aac ggt tca	1039		
Gly Leu Asn Gln Asp Arg Tyr Pro Gly Asn Ser Val Ala Asn Gly Ser			
280	285	290	
 tac agg ccc gag agt caa caa agt ggt ttt gat cc ^g cta caa agc ctc	1087		
Tyr Arg Pro Glu Ser Gln Gln Ser Gly Phe Asp Pro Leu Gln Ser Leu			
295	300	305	
 aac tac gga ata cct cc ^g ttt cag ctc gag gga aag gat ggt aat gga	1135		
Asn Tyr Gly Ile Pro Pro Phe Gln Leu Glu Gly Lys Asp Gly Asn Gly			
310	315	320	
 ttc ttc gac gac ttg agt tac ttg gat ctg gag aac taaacaaaac	1181		
Phe Phe Asp Asp Leu Ser Tyr Leu Asp Leu Glu Asn			
325	330	335	
 aatatgaagc tttttggatt tgatatttgc cttaatccca caacgactgt tgattctcta	1241		
tccgagttt agtgatatacg agaactacag aacacgttt ttcttgttat aaaggtgaac	1301		
tgtatatac gaaacagtga tatgacaata gagaagacaa ctatagttt ttagtctgct	1361		
tctcttaagt tgttcttag atatgtttt tgtttgtaa caacaggaat gaataataca	1421		
cacttgtaaa aaaaaaa		1437	
 <210> 4			
<211> 335			
<212> PRT			
<213> Arabidopsis thaliana			
 <400> 4			
Met Ala Val Tyr Asp Gln Ser Gly Asp Arg Asn Arg Thr Gln Ile Asp			
1	5	10	15
 Thr Ser Arg Lys Arg Lys Ser Arg Ser Arg Gly Asp Gly Thr Thr Val			
20	25	30	
 Ala Glu Arg Leu Lys Arg Trp Lys Glu Tyr Asn Glu Thr Val Glu Glu			
35	40	45	
 Val Ser Thr Lys Lys Arg Lys Val Pro Ala Lys Gly Ser Lys Lys Gly			
50	55	60	
 Cys Met Lys Gly Lys Gly Pro Glu Asn Ser Arg Cys Ser Phe Arg			
65	70	75	80
 Gly Val Arg Gln Arg Ile Trp Gly Lys Trp Val Ala Glu Ile Arg Glu			

85	90	95
Pro Asn Arg Gly Ser Arg Leu Trp Leu Gly Thr Phe Pro Thr Ala Gln		
100	105	110
Glu Ala Ala Ser Ala Tyr Asp Glu Ala Ala Lys Ala Met Tyr Gly Pro		
115	120	125
Leu Ala Arg Leu Asn Phe Pro Arg Ser Asp Ala Ser Glu Val Thr Ser		
130	135	140
Thr Ser Ser Gln Ser Glu Val Cys Thr Val Glu Thr Pro Gly Cys Val		
145	150	155
His Val Lys Thr Glu Asp Pro Asp Cys Glu Ser Lys Pro Phe Ser Gly		
165	170	175
Gly Val Glu Pro Met Tyr Cys Leu Glu Asn Gly Ala Glu Glu Met Lys		
180	185	190
Arg Gly Val Lys Ala Asp Lys His Trp Leu Ser Glu Phe Glu His Asn		
195	200	205
Tyr Trp Ser Asp Ile Leu Lys Glu Lys Glu Lys Gln Lys Glu Gln Gly		
210	215	220
Ile Val Glu Thr Cys Gln Gln Gln Gln Asp Ser Leu Ser Val Ala		
225	230	235
Asp Tyr Gly Trp Pro Asn Asp Val Asp Gln Ser His Leu Asp Ser Ser		
245	250	255
Asp Met Phe Asp Val Asp Glu Leu Leu Arg Asp Leu Asn Gly Asp Asp		
260	265	270
Val Phe Ala Gly Leu Asn Gln Asp Arg Tyr Pro Gly Asn Ser Val Ala		
275	280	285
Asn Gly Ser Tyr Arg Pro Glu Ser Gln Gln Ser Gly Phe Asp Pro Leu		
290	295	300
Gln Ser Leu Asn Tyr Gly Ile Pro Pro Phe Gln Leu Glu Gly Lys Asp		
305	310	315
Gly Asn Gly Phe Phe Asp Asp Leu Ser Tyr Leu Asp Leu Glu Asn		
325	330	335

<210> 5
<211> 937
<212> DNA
<213> Arabidopsis thaliana

<220>
<221> CDS
<222> (164)..(802)

<400> 5

cttggaaaag aatctacctg aaaagaaaaaa aaagagagag agatataaat agctttacca 60
agacagatat actatctttt attaatccaa aaagactgag aactcttagta actacgtact 120
acttaaacct tatccagttt ctgaaacag agtactctga tca atg aac tca ttt 175
Met Asn Ser Phe
1
tca gct ttt tct gaa atg ttt ggc tcc gat tac gag cct caa ggc gga 223
Ser Ala Phe Ser Glu Met Phe Gly Ser Asp Tyr Glu Pro Gln Gly Gly
5 10 15 20
gat tat tgt ccg acg ttg gcc acg agt tgt ccg aag aaa ccg gcg ggc 271
Asp Tyr Cys Pro Thr Leu Ala Thr Ser Cys Pro Lys Lys Pro Ala Gly
25 30 35
cgt aag aag ttt cgt gag act cgt cac cca att tac aga gga gtt cgt 319
Arg Lys Lys Phe Arg Glu Thr Arg His Pro Ile Tyr Arg Gly Val Arg
40 45 50
caa aga aac tcc ggt aag tgg gtt tct gaa gtg aga gag cca aac aag 367
Gln Arg Asn Ser Gly Lys Trp Val Ser Glu Val Arg Glu Pro Asn Lys
55 60 65
aaa acc agg att tgg ctc ggg act ttc caa acc gct gag atg gca gct 415
Lys Thr Arg Ile Trp Leu Gly Thr Phe Gln Thr Ala Glu Met Ala Ala
70 75 80
cgt gct cac gac gtc gct gca tta gcc ctc cgt ggc cga tca gca tgt 463
Arg Ala His Asp Val Ala Ala Leu Ala Leu Arg Gly Arg Ser Ala Cys
85 90 95 100
ctc aac ttc gct gac tcg gct tgg cgg cta cga atc ccg gag tca aca 511
Leu Asn Phe Ala Asp Ser Ala Trp Arg Leu Arg Ile Pro Glu Ser Thr
105 110 115
tgc gcc aag gat atc caa aaa gcg gct gct gaa gcg gcg ttg gct ttt 559
Cys Ala Lys Asp Ile Gln Lys Ala Ala Ala Glu Ala Ala Leu Ala Phe
120 125 130
caa gat gag acg tgt gat acg acg acc acg aat cat ggc ctg gac atg 607
Gln Asp Glu Thr Cys Asp Thr Thr Thr Asn His Gly Leu Asp Met
135 140 145
gag gag acg atg gtg gaa gct att tat aca ccg gaa cag acg gaa ggt 655
Glu Glu Thr Met Val Glu Ala Ile Tyr Thr Pro Glu Gln Ser Glu Gly
150 155 160
gcg ttt tat atg gat gag gag aca atg ttt ggg atg ccg act ttg ttg 703
Ala Phe Tyr Met Asp Glu Glu Thr Met Phe Gly Met Pro Thr Leu Leu
165 170 175 180
gat aat atg gct gaa ggc atg ctt tta ccg ccg ccg tct gtt caa tgg 751
Asp Asn Met Ala Glu Gly Met Leu Leu Pro Pro Pro Ser Val Gln Trp
185 190 195

aat cat aat tat gac ggc gaa gga gat ggt gac gtg tcg ctt tgg agt 799
Asn His Asn Tyr Asp Gly Glu Gly Asp Gly Asp Val Ser Leu Trp Ser
200 205 210

tac taatattcga tagtcgttccattttgta ctatagtttggaaaatattct 852
Tyr

agttcctttt tttagaatgg ttccttcatt ttattttatt ttattgttgtt agaaacgagt 912

ggaaaataat tcaatacataaaa aaaaa 937

<210> 6

<211> 213

<212> PRT

<213> Arabidopsis thaliana

<400> 6

Met Asn Ser Phe Ser Ala Phe Ser Glu Met Phe Gly Ser Asp Tyr Glu
1 5 10 15

Pro Gln Gly Gly Asp Tyr Cys Pro Thr Leu Ala Thr Ser Cys Pro Lys
20 25 30

Lys Pro Ala Gly Arg Lys Lys Phe Arg Glu Thr Arg His Pro Ile Tyr
35 40 45

Arg Gly Val Arg Gln Arg Asn Ser Gly Lys